REMARKS

Claims 28, 29, 35, 37, 38, 40 – 43, 44 – 49, 51, and 54 – 59 are pending. Claims 28, 29, 35, 38, 45, 48, 49, 54, 56, 57 and 58 have been amended and new claim 59 was added. Claims 1 - 27, 30 – 34, 36, 39, 44, 50, 52, and 53 were cancelled. No new matter has been added by virtue of the amendments, support being found throughout the specification and claims as originally filed. In particular, support for the amendments to claims 28, 29, 48, 49, and 57 can be found in the specification at page 32, lines 3-10. Furthermore, support for new claim 59 can be found in Figures 1A-1D; page 25, lines 3-8; and at page 37, lines 1-3.

Claims 38, 54, 56, and 58 were amended solely to correct minor informalities (inserting a missing coma in claims 38, 54, and 56) and inserting the missing "and" in claim 58.

Any cancellation of the claims should in no way be construed as acquiescence to any of the Examiner's rejections and was done solely to expedite the prosecution of the application. Applicant reserves the right to pursue the claims as originally filed in this or a separate application(s).

Drawings

The Examiner has objected to the drawings under 37 CFR 1.83(a). In particular, the Examiner alleges that a number of claimed features are not shown in the drawings.

Applicants submit herewith a replacement set of drawings with the following numerals indicating each of the following items: 1 (first side, claim 48); 2 (second side, claim 48); 3 (at least one sensor chamber, claim 28); 4 (reservoirs, claim 35); 5 (delivery channels, claim 56); 6 (wells, claim 35); 7 (microtiter plate, claim 35); 8 (at least one sensor, claim 28); 9 (a scanning mechanism, claim 28); 10 (electrical element, claim 38); and 11 (backing, claim 29).

Applicants also submit herewith amendments to the specification. These amendments provide the numerals above in the section of the specification which provides for each of the indicated structures. The amendments do not add new matter and serve merely to correlate a structure in the drawing with the description in the specification.

Claim Objections

The Examiner has objected to claims 35, 44, 45, 53, and 57 for containing certain informalities. Applicants have amended claims 35, 44, 45, and 57 and have cancelled claim 53 as suggested by the Examiner.

Rejections under 35 U.S.C. §103(a)

Claims 28, 29, 38, 40, 48, 49, 51, 52, 53 and 56 were rejected under 35 U.S.C. 103(a) as being anticipated by Benavides et al. (US 6,443,179 (hereinafter "Benavides") in view of Sinclair et al. (A Cell-Based Bar Code Reader for High-Throughput Screening of Ion Channel-Ligand Interactions, (2002), *Anal. Chem.*, vol. 74, pages 6133-6138 (hereinafter "Sinclair")). Applicants respectfully traverse the rejection.

Claims 35 and 58 were rejected under 35 U.S.C. 103(a) as being anticipated by Benavides in view of Sinclair, and further in view of Pfost et al. (U.S. Patent No. 5,104,621 (hereinafter "Pfost")). Applicants respectfully traverse the rejection.

Claims 41 - 43 were rejected under 35 U.S.C. 103(a) as being anticipated by Benavides in view of Sinclair, and further in view of Bjornson et al. (U.S. Patent No. 6,103,199 (hereinafter "Bjornson")). Applicants respectfully traverse the rejection.

Claims 44, 45, 49 and 50 were rejected under 35 U.S.C. 103(a) as being anticipated by Benavides in view of Sinclair, and further in view of Crandall et al. (U.S. Patent No. 6,352,766 (hereinafter "Crandall")). Applicants respectfully traverse the rejection.

Claims 46 and 47 were rejected under 35 U.S.C. 103(a) as being anticipated by Benavides in view of Sinclair, and further in view of DiZio et al. (U.S. Patent No. 6,455,152 (hereinafter "DiZio")). Applicants respectfully traverse the rejection.

Claims 54 and 55 were rejected under 35 U.S.C. 103(a) as being anticipated by Benavides in view of Sinclair, and further in view of Chiu et al. (U.S. Patent No. 7,470,518 (hereinafter "Chiu")). Applicants respectfully traverse the rejection.

Claims 54 and 55 were rejected under 35 U.S.C. 103(a) as being anticipated by Benavides et al. in view of Sinclair, and further in view of Stanto et al. (U.S. Patent No. 7,125,660 (hereinafter "Stanto")). Applicants respectfully traverse the rejection.

Because all of the foregoing rejections rely on Benavides and Sinclair in combination with other secondary references, and in the sake of brevity, Applicants will address the rejections under 35 U.S.C. 103(a) together.

As an initial matter, Applicants' claims are not obvious for all of the reasons previously presented in prior responses and in particular Applicants' response dated June 14, 2010.

Applicants respectfully disagree with the rejection. Nevertheless, without acquiescing to the basis of the rejection, and solely to facilitate allowance, Applicants have amended claims 28, 29, 48, 49, and 57. As amended, the claims are directed to a system comprising a macroscale device which is interfaced with a microfluidic device, wherein the microfluidic device has three or more interdigitating microchannels suitable for containing a fluid stream, wherein the microfluidic device comprises a microchannel having a length and/or width that varies to provide a time delay in delivering a separate aqueous stream; and at least one sensor chamber containing at least one sensor, and wherein each microchannel comprises an outlet for delivering the separate aqueous stream into the sensor chamber, wherein the outlets of the microchannels intersect with at least one of the sensor chambers.

Benavides does not anticipate the invention as claimed. In particular, nowhere in the description or in any of the figures does Benavides teach or suggest that the microfluidic device has three or more microchannels suitable for containing a fluid stream, wherein the microfluidic device comprises a microchannel having a length and/or width that varies to provide a time delay in

delivering a separate aqueous stream and wherein the microfluidic device has at least one sensor chamber containing at least one sensor, and wherein each microchannel comprises an outlet for delivering a substantially separate aqueous stream into the sensor chambers, as taught in the present invention.

None of Sinclair, Pfost, Bjornson, Crandall, DiZio, Chiu, or Stanto cure the deficiency of Benavides, because none of these references, either individually or in combination, teach or suggest a microfluidic device comprising three or more microchannels wherein the microfluidic device comprises a microchannel having a length or width that varies to provide a time delay in delivering a separate aqueous stream. None of Sinclair, Pfost, Bjornson, Crandall, DiZio, Chiu, and Stanto, when combined with Benavides, teaches a system comprising the microfluidic device as claimed. Accordingly, Applicants request withdrawal of the rejection and allowance of the claims.

In addition, Applicants have added new claim 59 which is directed to an embodiment of the claimed system that comprises a gas/fluid interface, wherein the macroscale device contains gas and the microfluidic device contains fluid. Support for this embodiment is found, at least, in Figures 1A-1D; page 25, lines 3-8; and at page 37, lines 1-3. None of the references, either individually or in combination, teach or suggest a system comprising a fluid/gas interface, wherein the macroscale device contains gas and the microfluidic device contains fluid. Benavides only provides for a system comprising a fluid/fluid interface and none of the other cited references cure this deficiency.

Double Patenting

The Examiner argues that if claims 28 and 29 are found allowable, then claims 48 and 49 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. The Examiner argues that "when two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim." (Office Action, p. 13). Applicants respectfully traverse the rejection.

The claims are directed to different embodiments, and are not unnecessarily duplicative. However, in the interest of advancing prosecution, should claims 28 and 29 be allowed, applicants

would consider amending or canceling any claims that would be duplicates of the allowed claims under 37 CFR 1.75.

The Examiner argues that claims 28, 29, 48, 49 and 57 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of Owar et al., (US Patent No. 7,563,614 (hereinafter "Owar")) in view of Benavides. Upon notification of otherwise allowable subject matter in the instant case, Applicants will address the double patenting rejections by filing a terminal disclaimer if appropriate. Applicants respectfully request that the rejection be held in abeyance until after the claim amendments and remarks are considered.

CONCLUSION

Applicants believe that the amendments herein put the claims in condition for allowance.

Should the Examiner wish to discuss any of the amendments and/or remarks made herein, the undersigned attorney would appreciate the opportunity to do so.

The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment to Deposit Account No. 04-1105.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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